

CLIMATOLOGICAL DATA FOR FEBRUARY, 1911.

DISTRICT NO. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor.

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GENERAL SUMMARY.

Although temperatures for the month averaged below the normal, there was about the usual amount of sunshine. There were no well-defined warm or cold periods, the month showing remarkable evenness of temperature from day to day. The precipitation was slightly more than half of the usual amount, but, on account of the mild temperatures which operated to solidify and reduce the depth of the snow blanket, reports indicate that there is about the normal amount of snow remaining on the ground in mountainous sections. Much of the snow now on the ground fell early in the winter and is therefore quite compact and favorably conditioned for gradual melting which will tend to give a late flow of water equal to or exceeding the normal. As there was but little snow on the winter feeding grounds, range stock was enabled to keep in excellent condition. In general, the weather was especially favorable for building operations and early spring farm work.

TEMPERATURE.

The mean temperature for the month was below the normal in all sections of the district, except in the northern valleys of the Flathead country in Montana, where it was slightly above the normal. The deficiency averaged greatest over the high plateau in central and southeastern Oregon, where the unusual number of clear nights favored rapid radiation. Along the Oregon coast, where marked departures are unusual, the mean temperatures were very low compared with the normals, the deficiency in this case being due to the absence of the storms and the accompanying warm southerly winds that characterize February weather along the North Pacific coast. The temperatures were more nearly normal in western Washington.

The deficiency throughout the district was due to uniformly cold weather rather than to extremes of cold, the lowest temperatures recorded being not unusually low for this month.

As determined from the records of 244 stations, the average mean temperature is 29.6° , or 3.3° below the district average. The mean temperatures ranged between 43.2° at Newport on the Oregon coast, and 8.1° at Snake River, Wyo., on the headwaters of the Snake. The highest temperature recorded, 69° , occurred at Gold Basin, Wash., on the 1st, and the lowest, -33° , on the 27th at Pleasant Valley, Mont. East of the Cascade Mountains, the highest temperatures occurred during the first decade, but west of the mountains they occurred generally during the latter part of the month. The last week was the coldest period.

PRECIPITATION.

The precipitation for the month for the entire district averaged about 54 per cent of the normal, the greatest deficiency being along the coast, where it reached 10 inches in southern Oregon. A few scattered stations in the eastern portion of the district report a slight excess, but on the whole the most striking peculiarity of the month's weather was the remarkably light precipitation.

The precipitation was well distributed throughout the month, the heaviest falls occurring generally from the 10th to the 15th.

The average as determined from the records of 332 stations, is 2.09 inches, which is 1.83 inches below the normal amount for the district. The greatest precipitation for the month was 12 inches at Longmire Springs, Wash., and the least was 0.15 inch at Blalock, Oreg., and also at Loon Creek, Idaho. The greatest amount recorded in 24 hours was 3.20 inches on the 13th at Glenora, Oreg., in the coast drainage area. Other heavy 24-hour falls were: 2.78 inches on the 13th at Spirit Lake, Idaho, and 2.10 inches at Port Orford, Oreg., on the 1st.

THE RIVERS.

The rivers throughout the district were below the normal for the month. With the exception of the Snake River the stages were uniformly lower than those for January. The highest stages were reported near the first of the month and the lowest on the last few days. In most cases the lowest occurred on the 28th.

The Columbia River averaged 1.8 feet, which is 1.2 feet below the normal for the month, being 2.3 feet below at The Dalles and 1.8 feet below at Vancouver. Compared with the January mean stage, the average was 0.3 foot lower.

The Willamette River averaged 5.2 feet, which is 2.1 feet below the February normal, being 3.2 feet below at Wilsonville and 2.8 feet below at Salem. The highest stage reported was 11.5 feet at Wilsonville on the 3d. A stage of 16.2 feet was reached at McMinnville on the Yamhill River on the 14th.

The Snake River averaged 3.4 feet, which is exactly normal. The highest stage reported was 7.2 feet at Lewiston on the 3d and the lowest was 1.6 feet at the same place on the 28th.

Preliminary work has begun on the north jetty at the mouth of the Columbia River. This is the final step toward the completion of the vast works necessary to permanently insure a deep channel for the river. Expert engineers claim that every foot of construction on the north jetty is equivalent to three on the south jetty, as it will approach the old jetty at a rapid angle and thereby

narrow and consequently deepen the main channel by forcing it to scour itself out. It has been decided to have the machine and repair shops retained at Fort Stevens, on the Oregon side, because of the heavy expenditures involved in their removal to the Washington shore.

MISCELLANEOUS.

Many of the observers reported that the month was very bright and cold, with but little moisture, most of which fell in the form of snow, so that in many localities the depth of snow on the ground is greater than usual, notwithstanding the deficiency in precipitation. During the first five days of the month a severe storm prevailed in western Montana which blocked the traffic on the Great Northern Railway between Essex and Summit, immediately west of the Continental Divide. Hail and sleet occurred in many places west of the Cascades on various dates. Solar halos were recorded at a few places on the 7th, and lunar halos were observed in many places on the 6th, 7th, 8th, and 9th. Thunderstorms occurred at Corvallis, Oreg., on the 11th, and at Port Orford, Oreg., on the 13th. The following high winds were recorded: North Head, Wash., 84 miles southeast, on the 12th; Tatoosh Island, Wash., 62 miles southeast, on the 13th; Seattle, Wash., 48 miles south, on the 12th; Pocatello, Idaho, 42 miles southwest, on the 2d; Walla Walla, Wash., 39 miles southeast, on the 12th; and Lewiston, Idaho, 34 miles west, on the 2d. The prevailing direction of the wind was from the southwest.

IRRIGATION IN IDAHO.

By S. H. HAYS.

Idaho during the last five years has probably been the scene of greater irrigation development than any of the other Western States. Owing to special advantages in the way of water supply, private investors as well as the Government have been attracted to the southern portion of the State. The Boise-Payette and Minidoka projects in the southern portion of the State are among the most notable of those undertaken by the Government.

The so-called Carey Act, which has been largely responsible for Idaho irrigation development, was first enacted in 1894, and provided that 1,000,000 acres of land should be granted to each of the States in the arid region conditioned upon their securing the irrigation and reclamation of these lands. In 1896 it was provided that the State might create a lien against the separate legal subdivisions of land to be reclaimed for the cost and expenses of reclamation. Originally the act expired by a 10-year limitation, which prevented any large use being made of it, but by the act of March 3, 1901, it was provided that the 10-year period of time should be so extended that the State might have 10 years in which to reclaim each project. In order to carry out the terms of the act, it was provided by State legislation that the State Board of Land Commissioners should consider the proposals of private persons or corporations for the construction of the necessary irrigation works, that they should fix the amount of the lien upon the land and should provide for the construction of the works under State supervision and the ultimate turning over of the works to the settlers. This plan provided State supervision, construction by a private corporation, and ultimate municipal ownership. The State statute being broad in its terms permitted the State Land Board a wide latitude in making contracts so that the board might make each contract to fit the particular conditions in each case.

TWIN FALLS SOUTH SIDE PROJECT.

The most extensive of the earlier works to be constructed under the terms of this act in the State of Idaho was the project of the Twin Falls Land & Water Co. This company entered into a contract with the State of Idaho in the year 1903 for the construction of the irrigation system now covered by what is generally known as the Twin Falls South Side Project. The contract called for the construction of a dam in Snake River at the present town of Milner, a main canal approximately 80 miles long, and an elaborate system of laterals. Construction was rushed as fast as possible, and water was first turned into the canal March 1, 1905. The dam by which water is diverted from Snake River is approximately 2,000 feet long and 80 feet high at its highest point. It is of the type known as rock-filled, being constructed of large boulders with earth and gravel sluiced in. The width up and downstream of the rock section is approximately 100 feet, the total width with the earth facing being 450 feet. The dam has been in use for five years and has given excellent satisfaction.

Two small rocky islands in the center of the stream form a part of the dam. On top of one of these islands are 99 gates, forming the principal spillway. On top of the other island a concrete weir with flashboards furnishes an additional spillway for extreme high water. The entire irrigation system called for under the contract with the State was constructed within the five-year period, and the works were in the fall of 1909 turned over to the settlers, a corporation composed of the settlers having been organized for that purpose. These works cover an area of 215,000 acres, approximately 150,000 acres of which are already in cultivation.

The growth of towns has been rapid. In colonizing the tract it was soon found that unless towns were established the settlement of the country would be greatly retarded. The town of Twin Falls, the principal town on the tract, which had less than 200 inhabitants on the 1st of March, 1905, now has a population of over 7,500. It has electric lights, telephone system, waterworks, an excellent sewer system, and is now paving a considerable portion of its streets. A courthouse, costing \$150,000, is in the course of construction; two hotels, costing to exceed \$100,000 each, are already built and open to the public; and at the last session of Congress \$10,000 was appropriated for the purpose of purchasing a site for a Federal building.

Original landholdings on the tract averaged 120 acres to each farm. The average landholding is now 68 acres, a change that necessarily results from the fact that irrigation calls for intensive cultivation. There are now living in towns on this tract in the neighborhood of 10,000 people.

TWIN FALLS NORTH SIDE PROJECT.

The next in point of time and the greatest in magnitude is the project of the Twin Falls North Side Land & Water Co. The works of this company take water from the north end of the Milner Dam above described through a canal extending in a northwesterly direction a distance of 97 miles and having also a lateral system covering several hundred miles. The area under this canal is approximately 230,000 acres. Very heavy work was encountered in building the first 4 miles of the main canal on this project, and in order to secure efficient service this section of the canal was lined with concrete, giving it a capacity of 3,250 cubic feet per second. The normal flow of Snake River in ordinary years is 6,000 second-feet up to the 15th or 20th of July. In order to supplement this supply,

TABLE 1.—Climatological data for February, 1911. District No. 12, Columbia Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmetted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Montana.</i>																				
Anaconda.	Deer Lodge.	5,300	10	18.8	-	43	11	-11	28	35	0.67	-	8.1	15	10	3	-	C. D. Demond.		
Bison Mountain.	Powell.	7,240	-	-	-	-	-	-	-	-	-	0.40	23.0	8	11	11	6	-	C. H. Anderson.	
Butte.	Silver Bow.	5,716	17	19.0	-	5.5	42	11	-7	28	33	0.60	-0.22	0.20	6.0	5	14	4	J. R. Wharton	
Columbia Falls.	Flathead.	3,100	16	24.8	+ 0.6	42	17	-	1	28	27	-	-	-	-	-	-	Mrs. I. M. Kennedy.		
Como ¹² .	Ravalli.	3	24.0	-	-	42	10	-4	27	26	0.50	-	0.20	7.5	5	15	5	Hiram Platt.		
East Anaconda.	Deer Lodge.	5,500	6	20.2	-	46	11	-4	27	30	0.81	-	0.61	7.4	7	15	10	C. D. Demond.		
Fortine.	Lincoln.	2,975	6	22.0	-	40	10	-16	28	51	1.03	-	0.23	14.0	9	10	4	Mike Petery.		
Hamilton.	Ravalli.	3,575	8	25.9	-	42	5	-3	27	28	0.23	-	0.10	3.0	3	12	15	Bitter Root Valley Ir. Co.		
Hat Creek.	Powell.	6,000	2	-	-	-	-	-	-	-	-	0.98	-	0.18	14.2	10	10	8	M. K. Landreth.	
Kalispell.	Flathead.	2,965	13	25.0	+ 1.2	40	5	-4	27	31	0.48	-	0.36	5.0	6	9	9	Weather Bureau.		
Lost Creek.	Deer Lodge.	5,200	2	-	-	-	-	-	-	-	-	0.71	-	0.45	9.0	3	20	3	Frank Heenaut.	
McGinnis Meadows.	Lincoln.	2	22.4	-	-	46	47	-20	28	60	0.91	-	0.19	9.9	10	10	7	H. L. Bebee.		
Missoula.	Missoula.	3,225	32	24.4	0.0	42	1	-3	28	25	0.41	-	0.47	0.22	5	-	-	Weather Bureau.		
Ophir.	Powell.	8,800	12	-	-	-	-	-	-	-	-	0.69	-	0.22	7.5	4	10	2	E. S. Wilson.	
Ovanlo ¹³ .	do.	4,207	12	13.2	-	5.1	35	8	-26	28	46	1.45	-	0.45	0.40	14.5	11	0	0	S. B. Muchmore.
Philipsburg.	Granite.	5,275	8	18.6	-	49	11	-18	28	45	0.75	-	0.30	10.5	4	14	3	G. T. Bramble.		
Plains.	Sanders.	2,475	13	25.0	-	2.0	50	12	-3	27	34	0.30	-	0.37	3.0	1	17	0	M. H. Pierce.	
Pleasant Valley.	Flathead.	3,500	4	17.7	-	53	10	-33	27	70	1.82	-	0.70	17.0	9	12	11	A. D. Stillman.		
Poison.	do.	2,920	4	28.0	-	54	10	-4	28	33	0.62	-	0.40	9.1	5	-	-	F. P. Brown.		
Proctor.	do.	2,800	7	-	-	-	-	-	-	-	-	-	-	-	-	-	C. E. Proctor.			
St. Ignatius.	Missoula.	2,700	6	24.6	-	45	1	-15	28	36	0.31	-	0.31	3.0	1	12	3	U. S. Reclamation Service.		
St. Regis.	do.	2,650	4	-	-	-	-	-	-	-	-	-	-	-	-	-	R. D. Lee.			
Saltse.	Lincoln.	3,600	5	20.6	-	38	11	-1	27	24	3.10	-	0.72	28.0	5	21	0	E. K. Tarbox.		
Snowshoe.	do.	4,500	17	-	-	-	-	-	-	-	-	0.60	42.4	14	9	3	J. C. Riter.			
Troy.	Deer Lodge.	1,880	5	-	-	-	-	-	-	-	-	0.34	-	0.25	4.0	4	16	8	W. E. Milnor.	
Willow Glen stock farm ¹⁴ .	Wyoming.	5,064	1	-	-	49	11	-	-	-	-	-	-	-	-	-	-	G. E. Luce.		
<i>Wyoming.</i>																				
Afton.	Uinta.	6,200	7	11.2	-	8.0	41	12	-27	16	55	1.13	-	0.47	0.27	11.5	8	18	2	A. V. Call.
Alta.	do.	7,000	1	12.0	-	36	17	-24	17	49	0.68	-	0.30	6.3	5	13	3	12	Mrs. Lucy Brown.	
Bedford.	do.	5,900	11	11.0	-	8.1	47	11	-26	16	1.22	-	0.46	0.44	12.2	6	15	6	C. G. Heiner.	
Belcher River.	Yellowstone Park.	-	-	-	-	-	-	-	-	-	-	-	-	2.70	-	-	-	U. S. Army.		
Snake River.	do.	7,000	5	8.1	-	35	1	-30	17	57	0.60	-	0.40	6.0	2	11	10	Do.		
<i>Nevada.</i>																				
San Jacinto.	Elko.	-	6	17.5	-	41	1	-18	16	43	0.33	-	0.19	8.5	2	17	6	5	Mose Jones.	
<i>Utah.</i>																		T. B. Jones.		
Standrod.	Boxelder.	-	6	21.7	-	41	2	-4	27	30	0.88	-	0.16	17.0	13	17	3	8	nw.	
<i>Idaho.</i>																				
Albion.	Cassia.	4,650	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C. E. Bocock.		
Alpha.	Bolse.	-	-	13.4	-	38	7	-23	28	55	-	-	-	-	-	-	-	J. W. King.		
Blackfoot I.	Bingham.	4,503	16	20.8	-	5.3	43	11	-6	30	0.47	-	0.34	0.18	8.1	6	9	15	sw.	
Blackfoot Dam.	do.	1	10.5	-	-	42	24	-31	17	49	-	-	-	-	16	2	10	nw.	N. W. Irisfield.	
Bocks Ranch.	Elmore.	3,500	2	-	-	-	-	-	-	-	0.76	-	0.27	7.5	6	-	-	William Bock.		
Bogus Creek.	Bolse.	4,200	3	-	-	-	-	-	-	-	1.08	-	0.26	15.0	8	-	-	F. P. Ingraham.		
Bolse.	Ada.	2,739	26	30.0	-	3.8	50	11	14	3	20	0.72	-	0.50	0.19	9.1	12	11	U. S. Weather Bureau.	
Bonners Ferry.	Bonneville.	1,850	4	26.8	-	44	21	-1	27	44	0.80	-	0.43	4.0	5	18	6	4	Patrick Moriarty.	
Boulder Mine.	Bolse.	4,800	2	-	-	-	-	-	-	-	-	-	-	0.62	31.8	10	23	4	Hugh Taylor.	
Buhl.	Twin Falls.	3,800	5	26.9	-	50	17	-	4	17	32	0.52	-	0.20	4.5	8	19	2	Dr. W. J. Boone.	
Calidwell.	Canyon.	2,372	7	30.1	-	49	11	5	24	31	0.89	-	0.20	9.6	9	4	15	Mrs. Edna Faulkner.		
Camas.	Elmore.	4,815	3	17.1	-	36	4	-5	8	35	0.62	-	0.30	2.4	6	-	-	Robert Hoffman.		
Cambridge.	Washington.	2,651	15	21.8	-	5.3	40	6	-4	8	35	0.84	-	1.34	0.45	7.6	4	13	6	Chas. H. Shepherd.
Cedar Creek Dam ¹⁵ .	Twin Falls.	1	-	-	-	-	-	-	-	-	-	-	-	1.70	0.75	19.5	5	7	12	Do.
Chesterfield.	Bannock.	5,424	15	14.6	-	5.5	43	11	-27	17	48	0.59	-	0.37	0.22	13.0	6	16	5	Chas. T. Scott.
Coeur d'Alene.	Kootenai.	2,157	19	29.4	+ 0.3	41	10	17	21	29	1.17	-	1.09	0.25	17.2	10	-	-	Frank Hedrick.	
Cottonwood Creek.	Boise.	4,000	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R. R. Richmond.		
Culdesac.	Nez Perce.	1,520	3	29.8	-	45	13	9	26	30	1.82	-	0.70	14.5	5	11	7	H. P. Henry.		
Deary.	Latah.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Emil Schuessler.		
Dent.	Clearwater.	1,350	5	32.24	-	50	28	9	28	41	0.21	-	0.12	4.0	3	9	9	10	Walter H. Durrant.	
Driggs.	Fremont.	6,097	4	10.4	-	38	10	-25	17	49	0.47	-	0.21	18	6	4	s.	Geo. B. Edie.		
Edie.	do.	12	13.1	-	-	39	1	-11	23	33	-	-	-	0.12	6.2	8	10	10	C. P. Kar.	
Emmett.	Canyon.	2,350	11	31.3	-	47	11	11	24	26	0.43	-	0.12	5.2	4	12	11	5	M. B. Merritt.	
Forney.	Lemhi.	11	17.6	-	-	48	11	-18	28	47	0.22	-	0.09	5.2	3	16	9	3	Mrs. Gertrude M. Ross.	
Garden Valley.	Boise.	3,600	6	-	-	-	-	-	-	-	0.40	-	0.19	7.4	3	16	9	3	Asa A. Kenison.	
Garnet.	Elmore.	2,575	12	31.2	-	6.1	56	11	10	24	29	0.48	-	0.35	0.22	7.3	6	15	5	I. E. Perkins.
Glenns Ferry.	do.	2,598	3	29.0	-	53	11	8	14	29	0.51	-	0.30	4.5	4	18	5	5	John Krall, Jr.	
Gooding.	Lincoln.	3,572	2	24.8	-	47	11	0	27	43	0.43	-	0.21	8.3	5	11	10	Henry Kottkey.		
Grand Forks.	Shoshone.	3,000	12	22.8	-	45	10	-11	27	45	2.92	-	0.63	25.7	8	13	3	12	N. G. Massey.	
Grandview.	Owyhee.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Joseph M. Clarke.		
Grimes Pass ¹⁶ .	Boise.	5,200	2	-	-	-	-	-	-	-	1.33	-	0.27	30.3	11	-	-	-	Fred Perry.	
Guffey.	Owyhee.	2,381	3	32.8	-	52	11	-12	24	29	0.59	-	0.17	6.1	7	12	15	1	U. S. Forest Service.	
Hailey.	Blaine.	5,347	6	17.4	-	49	1	-7	17	31	1.38	-	0.53	16.3	6	15	10	3	J. M. Waterhouse.	
Hotspring.	Owyhee.	2,752	6	29.8	-	54	11	7	3	30	0.60	-	0.28	7.0	3	13	7	8	Mrs. Emma L. Hammer.	
Idaho City.	Boise.	4,000	10	-	-	-	-	-	-	-	1.29	-	1.61	0.53	17.2	-	-	-	Dr. T. M. Bridges.	
Idaho Falls.	Bonneville.	4,742	17	20.3	-	0.9	45	11	-10	28	41	0.85	-	0.40	0.22	9.0	7	19	4	E. D. Faust.
Indian Valley ¹⁷ .	Adams.	2,999	3	-	-	-	-	-	-	-	0.									

TABLE 1.—*Climatological data for February, 1911. District No. 12—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	
<i>Idaho</i> —Continued.															
Payette.	Canyon.	3,159	21	29.8	-3.5	45	2	11	8	28	0.27	-1.09	0.14	3.2	n.
Peaceful Valley.	do.	3,325	1								0.53		0.15	4.3	se.
Pebble.	Bannock.	5,277	2	16.7		48	1	-25	17	46	0.30		0.30	10.8	sw.
Pierson.	Custer.	7,000	1								1.50		0.82	12.0	s.
Piney.	Elmore.	4,100	2								0.59		0.43	13.0	se.
Pleasant Valley.	Ada.	3,000	4	27.4		48	11	5	24	39	0.64		0.17	8.7	se.
Pocatello.	Bannock.	4,483	12	23.2	-4.9	45	11	-2	27	33	1.50	+0.65	0.35	14.0	U. S. Weather Bureau.
Poplar.	Bonneville.		1										0.15	9.4	C. M. Lawrence.
Porthill.	Bonner.	1,665	32	26.0	-1.1	44	3	-4	28	37	0.45	-1.53	0.28	5.5	H. A. French.
Powers Ranch.	Boise.	4,300	3								2.16		0.38	19.0	Mrs. Mary French.
Pyle Creek.	do.	3,100	1								2.68		1.54	10.6	P. V. Smith.
Rattlesnake Creek.	Elmore.	4,000	2								1.41		0.52	10.2	R. M. Green.
Richfield.	Lincoln.		1	19.6		41	5	-9	17	35	0.42		0.20	5.0	Idaho Irrigation Co.
Roseworth.	Twin Falls.		1								0.31		0.15	4.4	D. B. Hartwell.
Roseberry.	Boise.												0.15	5.0	P. V. Lucas.
Ruby Creek.	do.	4,400	3										0.43	22.3	O. A. Hatter.
Rupert.	Lincoln.	4,204	5	23.0		48	17	-5	14	42	0.69		0.18	17.1	Will Farry.
St. Maries.	Kootenai.	2,263	13	27.3	-5.0	47	10	-4	28	47	1.85		0.69	25.7	J. S. Turnbull.
Salmon.	Lemhi.	3,040	6	15.8		42	1	-10	28	29	0.21		0.07	4.1	B. C. d'Easum.
Salmon River Dam.	Twin Falls.		3	23.2		46	11	-4	16	39	0.56		0.31	10.2	A. M. Gilbert.
Sandpoint.	Bonner.	2,086	2	26.4		42	12	1	24	40	2.13		0.40	10.4	J. H. Edgerton.
Sheep Hill.	Boise.	5,000	12								1.63		0.51	20.5	C. M. Gardner.
Shoshone.	Lincoln.	3,968	33	23.0		45	11	-1	17	28	0.87		0.40	19.3	O. A. Truman.
Silver City.	Owyhee.	6,280	4								1.78		0.39	22.8	A. D. Bradfield.
Smith Prairie.	Elmore.	5,200	1								1.49		0.39	16.3	W. W. Newell.
Smith Ranger Station.	Bonner.	1,080													T. D. Crittenden.
Soldier Creek.	Blaine.		1	18.2		40	47	-8	17	36				31.2	J. E. Minear.
Spirit Lake.	Kootenai.	2,239		48		12	-1	9	28	54	4.23		2.78	24.0	M. C. Krause.
Springfield.	Bingham.	4,420	2	19.6		43	11	-10	27	39	0.64		0.29	7.8	Mrs. W. A. Edwards.
Sugar.	Fremont.		4	17.2		44	12	-10	17	40	0.49		0.27	7.0	Utah-Idaho Sugar Co.
Sunnyside.	Elmore.	2	25.8			46	11	-2	16	31					E. A. Wilmet.
Tripod Mountain.	Boise.	4,300	2			52	11	1	16	33	1.22		0.33	11.3	Mrs. Verna Paddock.
Twin Falls.	Twin Falls.	3,825	6	25.0		52	11	1	17	36	0.74		0.31	5.6	J. A. Waters.
Vernon.	Fremont.		14	15.8	-6.0	40	-15	17	45	51	1.29		0.26	1.20	A. M. Slattery.
Wallace.	Shoshone.	2,728	4	26.4		43	11	4	27	37	3.11		0.77	15	U. S. Weather Bureau.
Wendell.	Lincoln.	3,400	3	26.6		50	11	2	14	29	0.18		0.07	4.0	C. L. Dingler.
<i>Washington</i> .															
Aberdeen.	Chehalis.	162	20	39.1	-1.9	55	17	24	12	26	4.93	-5.30	1.05	3.5	C. S. Weatherwax.
Anacortes.	Skagit.	60	17	38.8		55	10	10	30	37	1.75	-1.19	0.37	9.9	Douglas Allmond.
Baker.	do.	200	5	37.4		58	28	19	32	32	3.37		1.07	9.5	Robt. M. White.
Bellingham.	Whatcom.	60	16	38.0	-3.7	57	12	32	24	31	2.46	-0.66	0.75	10	Sanford B. Mayhew.
Bellingham (near).	do.			37.5		52	11	12	24	24	1.94		0.47	10	U. S. Bu. Plant Industry.
Blaine.	do.	57	14	36.9	-0.7	52	27	15	2	27	1.67	-2.81	0.42	2.0	John W. Sheets.
Blewett.	Chelan.	2,200	1			40	11	-1	2	34	0.98		0.50	19.0	John Burmester.
Bremerton.	Kitsap.	30											0.50	8	U. S. Navy Yard.
Brewster.	Okanogan.	1,620	1	25.2		40	11	-1	2	34	0.98		0.38	9.5	Mrs. H. F. Bertram.
Bumping Lake.	Yakima.	3,400													Valley Power Co.
Cashmere.	Chelan.	960													George Landsburg.
Celar River.	King.	535	4												I. S. Turner.
Centralia.	Lewis.	212	18	38.8	-1.7	63	23	15	25	39	3.31	-2.81	0.31	9.5	J. E. Buchanan.
Cheney.	Spokane.	2,351	27	27.4		42	67	19	30	37	0.77	-0.57	0.29	6.7	J. A. Balmer.
Clealum.	Kittitas.	1,930	27	27.2	-2.8	46	8	1	16	37	1.19	-2.35	0.27	16.0	Geo. Gibbs.
Clearbrook.	Whatcom.	140	8	34.6		54	22	5	32	32	2.24	-0.24	0.61	3.0	W. H. James.
Golfax.	Whitman.	2,300	22	29.0	-4.8	45	17	6	3	35	1.56	-0.17	0.82	5.0	W. L. Sax.
Colville.	Stevens.	1,635	11	26.4	1.2	44	20	-1	27	41	0.93	-0.80	0.42	5.0	Wm. Baines.
Conconully.	Okanogan.	2,300	11	23.0	-3.4	48	27	-11	2	45	2.55	+1.33	1.10	23.0	Do.
G crescent.	Lincoln.	2,250	11												Klickitat Co. Abstract Co.
Davenport.	do.	2,450	2												C. H. Cleaver.
Dayton.	Columbia.	1,700	25	30.6	-3.9	51	107	3	28	29	1.89	-0.93	0.61	15.0	Dr. F. H. Monk.
Detroit.	Mason.	30	3	38.6	-0.8	54	197	24	4	26	2.37		0.62	12	C. M. MacKintosh.
Dixie.	Walla Walla.	5,000	2										1.65	7.0	L. D. Hurt.
Duckabush.	Jefferson.	380	3	34.2		59	187	18	24	34	5.06		1.25	2.0	R. L. Barnes.
East Sound.	San Juan.	500	16											18	T. J. Cook.
Ellensburg.	Kittitas.	1,571	23	29.3	-1.1	48	8	7	16	35	0.40	-0.69	0.32	2.1	Dr. F. H. Monk.
Ephrata.	Grant.	1,265	8	28.4		45	17	7	2	33				15	C. M. MacKintosh.
Forks.	Clallam.	480	2											12	L. D. Hurt.
Fort Simeon.	Yakima.	1,427	17	28.8	-6.2	50	2	9	15	32			12.5	W. W. Hendron.	
Goat Lake.	Snootomish.	2,900	2			69	1	25	2	41	6.39		1.24	12	Walter O. Eckert.
Gold Basin.	do.			40.6									1.24	7	T. Z. Andrews.
Gold Creek.	Yakima.	2,600	2										1.34	0	E. G. Newman.
Goldendale.	Klickitat.	1,600	5	33.0		48	8	13	15	27	0.52	-1.22	0.10	4.9	Do.
Granite Falls.	do.	397	8										0.83	5	Klickitat Co. Abstract Co.
Hatton.	Adams.	1,100	6	31.2		50	8	4	25	31	0.57		1.87	5	C. H. Cleaver.
Huntsville.	Columbia.	1,400	3										0.25	7.0	Mrs. J. S. Myers.
Irene Mountain.	Okanogan.	3,015	2										1.05	6	W. W. Clabough.
Kennewick.	Benton.	367	15	34.8	-3.0	68	1	11	2	50	0.86	+0.12	0.31	9.5	U. S. Engineer Corps.
Kettle Falls.	Stevens.	1,265	2	28.2		46	207	4	27	37	1.14		0.35	5.5	Samuel Estes.
Kiona.	Benton.	430	6	34.9		51	2	16	20	30	0.71		0.32	6.7	P. H. Leese.
Kosmos.	Lewis.	775	5	36.8		55	23	18	30	2.65		0.62	13.0	Mrs. Barbara Shearer.	
La Center.	Clarke.	250	14	36.4	-4.0	53	23	19	31	29	3.21	-3.78	1.28	12	Mrs. J. S. Myers.
Lacrosse.	Whitman.	1,400	2	31.4		46	1	8	2	36	1.25		0.60	8.5	W. H. Mottinger.
Lake Clealum.	Kittitas.	2,171	2										0.35	25.5	G. H. Mottinger.
Lake Kachess.	do.	2,235	3	26.4		43	28	5	23	36	4.10		0.80	41.0	D. Witt Burns.
Lake Keechelus.	do.	2,470	3										0.80	13	Henry B. Scudder.
Lakeside.	Chelan.	1,116	20	27.5	-2.5	42	11	7	2	27	0.92	-0.41	0.39	9.5	Chas. M. Talmadge.
Laurel.	Klickitat.	1,900	2										0.62	22.2	W. H. Van Meter.
Lester.	Ferry.	1,644	25	7		48	6	-4	27	41	1.04		0.23	11.4	Mrs. Minnie E. Strout.
Lone Tree.	King.	1,614	7	31.2		48	23	8	15	35	2.95		0.55	31.5	W. W. Clabough.
Longmires Springs.	Chehalis.	14	2	40.6		51	28	28	2	15	4.56		0.95	5.5	U. S. Reclamation Service.
Lost Creek.	Pierce.	2,800	2	33.9		47	1	24	7	13	12.00		0.34	44.7	Do.
Lucerne.	Okanogan.	3,125	2								0.64		0.34	15.0	W. H. Mottinger.
McCumbers Ranch.	Chelan.	1,100	4	29.8		47	26	15	27	28	1.10		0.40	11.0	Mrs. Barbara Shearer.
Mottinger.	Yakima.	2,182	2	36.8	-2.4	57	17</								

TABLE 1.—Climatological data for February, 1911. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing direction of wind.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unadjusted.	Number of rainy days, .91 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Washington—Con.																					
North Head	Pacific	211	9	40.6	- 1.5	50	28	28	2	17	3.27	- 2.62	0.62	0.5	17	12	6	10	e.	U. S. Weather Bureau.	
Northport	Stevens	1,350	12	26.5	.....	43	5	3	26	39	0.81	- 0.93	0.20	.....	7	10	4	14		F. G. Janneck.
North Yakima	Yakima	1,070	2	33.6	.....	50	1	17	16	25	0.34	.....	0.23	3.9	5	10	10	8	nw.	Albert Bender.
Nutland	Klickitat	.....	3	34.5	.....	51	8	14	28	29	0.27	.....	0.13	5	.....	.....	.....	.....	.....	Miss Ruth J. Shepard.
Odessa	Lincoln	1,640	8	31.1	.....	47	4	- 2	25	42	0.75	.....	0.45	7.5	4	14	7	7	sw.	Wm. N. Neely.
Oila	San Juan	50	21	40.2	- 0.2	51	10	18	2	21	1.60	- 1.67	0.70	3.12	0.0	14	11	8	9	Cecil S. Willis.	
Olympia	Thurston	200	33	38.4	- 1.9	55	28	23	2	20	8.70	- 3.12	1.78	0.0	14	11	8	9	M. O'Connor.		
Omak	Okanogan	850	12	23.2	.....	45	14	- 2	28	42	0.75	.....	0.40	7.5	3	.....	.....	.....	.....	Wm. G. Tait.
Oroville	do	922	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peela	Garfield	5,000	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Samuel Gruell, sr.
Pomeroy	do	1,500	19	31.2	- 5.5	48	1	9	26	29	1.36	- 0.69	0.50	8.5	8	9	10	9	w.	Peter McClung.	
Port Crescent	Clallam	259	16	36.0	- 1.2	48	17	23	1	20	1.82	- 2.83	0.87	1.9	12	3	14	11	s.	U. S. Weather Bureau.	
Port Townsend	Jefferson	80	21	39.5	- 1.1	49	8	30	15	17	1.81	- 0.11	0.64	T.	11	8	4	16	se.	F. Plummer.	
Pullman	Whitman	2,556	19	26.9	- 5.9	40	1	10	3	20	2.48	+ 0.38	0.70	23.0	10	13	2	12a	se.	State Agricultural College.	
Quinault	Chehalis	200	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Republie	Ferry	2,628	11	21.8	- 3.7	39	67	- 7	27	42	0.99	.....	0.38	9.0	5	16	3	9	w.	Geo. B. Stocking.
Rex Creek	Chelan	1,135	4	33.3	.....	51	26	19	2	30	0.50	.....	0.30	5.0	3	8	3	14	se.	Jas. W. Nicol.
Ritzville	Adams	1,825	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rock Lake	Whitman	1,910	5	29.0	.....	47	13	7	25	30	0.81	.....	0.24	6.0	7	14	6	8	s.	P. M. Ramsey.
Rosalia	do	2,425	19	28.1	- 3.4	45	10	11	27	24	1.08	- 0.60	0.45	8.4	9	9	6	13	se.	Hans Mumml.	
Russells Ranch	Yakima	2,870	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seattle	King	123	20	39.8	- 0.7	51	8	27	12	30	1.42	- 2.44	0.30	3.6	12	4	10	14	se.	U. S. Weather Bureau.	
Sedro-Woolley	Skagit	38	14	38.0	- 2.6	60	23	14	2	34	3.63	- 1.15	0.68	0.4	14	7	15	6		Mrs. H. L. Devin.	
Sixprong	Klickitat	1,240	4	34.3	.....	49	8	12	28	26	0.40	.....	0.19	0.0	4	15	3	10	ne.	C. E. Comstock.
Skagit Power Dam	Whatcom	510	1	33.8	.....	47	28	11	2	29	2.69	.....	0.51	13.5	13	13	13	13	se.	Skagit Power Co.
Snohomish	do	100	17	37.3	- 3.7	58	19	17	2	34	3.03	- 1.07	0.75	4.0	13	8	3	17	se.	Warren Hodge.	
Snoqualmie Falls	King	667	12	37.2	- 3.0	51	23	21	27	35	3.13	- 3.16	0.60	14	12	5	11	ne.	O. N. Wiswell.		
Snyders Ranch	Okanogan	2,200	12	18.8	.....	42	67	- 10	7	45	0.98	.....	0.49	10.5	4	15	10	3	ne.	George M. Snyder.
South Bend	Pacific	30	20.1	4.0	0.0	54	87	26	27	27	0.30	- 5.46	1.41	1.3	10	13	5	5	e.	Wimberly Elchner.	
Spokane	Spokane	1,943	30	20.1	.....	49	28	26	2	20	1.43	.....	0.45	14.3	7	17	8	3	sw.	U. S. Weather Bureau.
State University	King	170	2	38.6	.....	49	28	26	2	20	1.43	.....	0.45	14.3	7	17	8	3	sw.	University of Washington.
Stokes Ranch	Okanogan	2,670	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sumner	Pierce	77	3	37.7	.....	55	8	20	2	24	1.80	.....	0.37	0.5	14	11	5	12	n.	Herbert E. Thompson.
Sunnyside	Yakima	740	16	34.1	- 1.4	51	17	15	28	29	0.31	- 0.47	0.10	1.8	7	16	4	12	n.	U. S. Reclamation Service.	
Tacoma	Pierce	213	25	39.1	- 1.3	52	10	27	3	22	1.86	- 3.27	0.51	0.5	13	10	7	11	sw.	U. S. Weather Bureau.	
Tatoosh Island	Clallam	86	20	40.2	- 0.8	52	28	29	1	13	3.77	- 4.99	0.93	2.2	15	9	5	14	ne.	Do.	
Tieton	Yakima	2,000	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tonasket	Okanogan	945	23.4	.....	39	11†	0	24	32	0.95	.....	0.48	6.8	5	5	9	14	s.	E. H. Twilight.	
Toucheet	Walla Walla	556	4	33.6	56	1	4	28	30	1.46	.....	0.49	2.5	11	8	9	9	sw.	D. W. Dorrance.	
Toucheet Ridge	Columbia	2,500	7	.....	.....	.....	.....	.....	.....	.....	.....	1.90	8.0	13	8	6	14	sw.	R. H. King.	
Trinidad	Douglas	900	7	31.0	.....	47	1†	11	21	28	0.54	.....	0.20	5.0	5	16	4	8	nw.	J. C. Wheeler.
Vancouver	Clarke	100	36	40.4	- 0.4	59	23	24	3	32	2.90	- 1.18	0.60	T.	12	8	9	11	s.	A. A. Quarnberg.	
Vashon Island	King	40	12	38.6	- 1.7	51	8	25	27	18	2.08	- 2.62	0.29	1.6	2	10	8	10	sw.	Gertrude McClintock.	
Wahluke	Grant	410	7	34.9	55	15	21	24	28	0.50	.....	0.40	5.0	2	8	8	10a	9a	sw.	F. C. Koppen.
Wallace	Walla Walla	4,000	12	33.1	- 3.3	54	11	11	28	24	2.14	+ 0.60	0.81	17.0	10	9	5	14	s.	Geo. A. Wallace.	
Washougal	Clarke	1,000	27	33.1	- 3.3	54	11	11	28	24	2.14	+ 0.60	0.81	17.0	10	9	5	14	s.	U. S. Weather Bureau.	
Waterville	Douglas	2,624	21	21.0	- 4.0	40	1	- 3	16	31	1.17	- 1.86	0.50	11.7	6	13	7	8	w.	F. M. Grout.	
Wenatchee (near)	Chelan	1,109	12	28.6	- 2.1	45	12	9	2	26	0.68	- 1.11	0.22	9.0	5	9	10	9	w.	O. R. Hopewell.	
White Salmon	Klickitat	36.5	7	52	8	23	4	23	23	2.30	0.65	0.12	5.0	12	11	7	10	sw.	Geo. A. Pitcher.		
Wilbur	Lincoln	2,203	12	25.2	- 2.8	47	12	- 2	28	44	0.34	- 1.30	0.16	12.0	3	15	2	11	se.	Rollin J. Reeves.	
Wind River	Skamania	32.2	7	49	19	14	3	2	27	5.63	0.70	0.27	1.35	28.0	11	8	8	12	nw.	U. S. Forest Service.	
Winthrop	Okanogan	20.4	7	47	15	- 12	16	53	1	44	1.44	0.70	0.14	1.5	27.0	14	5	7	7	sw.	Methow Trading Co.
Yale	Cowlitz	375	4	39.6	54	10†	31	17	19	6.35	0.84	0.5	1.54	6.3	14	10	3	15	e.	L. F. Williams.
Zindell	Asotin	715	9	38.4	.....	55	1	18	3	32	2.31	.....	1.30	4.0	2	10	15	3	n.	M. W. Zindell.
Oregon																					
Albany	Linn	212	30	39.4	- 3.0	55	17†	25	3	28	2.88	- 2.91	0.46	0.0	14	11	6	11	s.	F. M. French.	
Ashland	Jackson	1,963	28	36.0	- 5.5	58	20	19	15	28	1.83	- 0.58	0.46	0.0	15	7	6	16	sw.	G. G. Eubanks.	
Astoria	Clatsop	16	51	40.9	- 2.1	55	23†	27	2	23	4.36	- 3.57	0.81	1.2	15	11	8	9	ne.	Irving Club.	
Baker	Baker	3,466	21	41.2	- 3.3	56	23	25	3	23	5.68	- 8.85	1.20	1.0	18	7	7	14	se.	U. S. Weather Bureau.	
Bay City	Tillamook	14	17	34.5	45	9†	16	27	27	3.85	- 3.59	0.90	15.0	7	14	3	11	sw.	John O. Bozorth.		
Bend	Crook	3,629	29	.....	5.5	45	9†	16	27	27	3.85	- 3.59	0.90	15.0	7	14	3	11	sw.	Bend Bulletin.
Black Butte	Lane	1,200	10	34.5	.....	56	10	27	27	3.85	- 3.59	0.90	15.0	7	14	3	11	sw.	Wm. Harris.	
Billock	Gilliam	237	13	38.2	- 0.2	52	8	17	23	30	0.15	0.15	T.	1	7	5	10	sw.	Geo. W. Long.		
Brogan	Malheur	28.6	42	42	2†	3	13	3	29	0.80	0.19	3.0	2	21	6	1	1	w.	A. B. Cox.		
Burns	Harney	4,157	20	18.0	- 9.0	39	1	- 7	15	37	0.50	- 0.91	0.18	7.0	4	14	9	5	n.	J. C. Welcome, jr.	
Cascade Locks	Hood River	100	21	37.6	- 1.7	50	18	23	3	19	5.26	- 4.67	1.32	4.5	1						

TABLE 1.—Climatological data for February, 1911. District No. 12—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing direction of wind.	Observers.				
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon—Continued.																				
Klamath Falls.	do.	4,100	22	22.5	-11.5	39	17†	-6	15†	29	0.55	-1.05	0.17	8.2	4	17	4	nw.	W. H. Heileman.	
LaGrande.	Union.	2,784	24	27.0	-3.7	45	4	-1	28	37	1.23	-0.65	0.20	23.5	13	8	11	7	se.	W. A. Worstell.
Lakeview.	Lake.	4,825	28																	Geo. L. Wharton.
McKenzie Bridge.	Lane.	1,400	10	33.8	-5.2	54	28	15	3	30	4.51	-4.01	0.75							Geo. Frissell.
McMinnville.	Yamhill.	182	24	39.8	-1.7	55	17	24	3	21	3.15	-2.53	0.54	T.	10	12	5	11	ne.	J. H. Pruett.
Madras.	Crook.	2,150	3																	Howard W. Turner.
Marshfield.	Coos.	34	10	41.3	-4.8	57	20	26	21	30	5.55		1.11	0.0	15					Mrs. Agnes Ritchson.
Merrill.	Klamath.	4,970	5	24.2	-47	9	-9	16	38	0.56		0.20	5.6	4	16	4	8		Frank Little.	
Mikkalo.	Gilliam.	1,400	5	32.8		51	1	6	26	29	0.32		0.22	2.0	2	13	5	10	w.	G. Muecke.
Miramonte Farm.	Clackamas.	195	23	38.8	-2.7	53	20	24	3	25	2.84	-2.28	0.80	0.0	13	10	6	12	s.	L. A. Peck.
Monroe.	Benton.	350	14																	Dr. Urban Fisher.
Mount Angel.	Marion.	485	25	39.6	-2.0	57	12	25	3	23	3.03	-1.88	0.60	0.0	12	14	3	11	n.	Raymond Markley.
Mountain Park.	Hood River.	1,440	5																	Alex. Lundberg.
Music.	Douglas.	5,000	2	27.4		43	8†	11	27	24	9.86		1.90	93.5	14	11	3	14	sw.	Wm. Matthews.
Newport.	Lincoln.	69	24	43.2	-2.4	50	24	28	3	28	3.54	-5.32	0.93	0.0	14	11	6	11	nw.	High School.
North Bend.	Coos.	20																		E. C. Woodward.
Paisley.	Lake.	4,500	8	27.3		45	10†	10	28	27	1.33		0.00	14.0	5	9	11	8	sw.	E. F. Averill.
Pendleton.	Umatilla.	1,070	12	33.7	-3.5	55	1	3	28	33	1.44	+ 0.04	0.30	6.5	10	11	10	7	e.	John P. McManus.
Pilot Rock.	Pilot Rock.	1,817	3	33.0		54	10	8	28	29	1.56		0.35	14.2	9	14	7	7	sw.	O. C. Yocom.
Pompeii.	Clackamas.	3,879	16	25.3	-6.4	44	3†	-13	27	38	6.14	-4.53	0.82	56.0	14	7	9	12	nw.	U. S. Weather Bureau.
Portland.	Multnomah.	57	41	40.2	-1.1	52	17	27	20	18	3.34	-2.39	1.02	0.2	13	8	8	12		J. D. Loucks.
Port Orford.	Curry.	80	6	41.8		56	17	28	27	24	7.20		2.10	0.2	14	14	7	7	n.	Geo. Whitels.
Prineville.	Crook.	2,845	15	29.0*	-7.1	48	1	4	25	31b	0.23	-0.86	0.07	9.7	6	8b	1b	17		E. F. Graham.
Prospect.	Jackson.	2,800	5	32.6		55	21	6	15	28	3.90		0.00	31.0	11	11	11	6	w.	Mrs. Iva B. Collins.
Ramsey.	Wasco.	1,350	10	31.6		47	1	11	29	24	0.68		0.30	7.6	6	16	3	9	e.	Mrs. Emma Arbuckle.
Range.	Grant.	3,500	3	29.0		50	9	0	15	32	0.62		0.50	5.0	7	11	6	11		L. G. Morgan.
Richland.	Baker.	2,350	10	29.0	-2.5	49	20	4	23	33	0.37		0.20	3.7	4	12	4	12		Mrs. Leah Fairnan.
Riverside.	Malheur.	3,000	12	20.4	-12.9	45	1	-9	16	43	0.80	-0.35	0.20	7.0	7	18	6	4	n.	U. S. Weather Bureau.
Roseburg.	Douglas.	510	33	38.8	-3.8	57	21	22	27	30	2.61	-1.95	0.43	5.3	14	7	12	9	s.	M. P. Baldwin.
Salem.	Marion.	120	21	40.1	-2.9	53	17	27	3	17	1.72	-2.87	0.88	0.0	13	6	2	20	sw.	Mrs. Anna Pearson.
Siskiyou.	Douglas.	4,115	3	29.2		43	21	14	15	20	2.58		0.62	34.5	9	7	8	13	s.	J. A. Wright.
Sparta.	Baker.	4,150	20																	John P. Gage.
Stafford.	Clackamas.	400	15	39.3	-2.2	60	8	24	3	28	3.17	-3.22	0.85	0.5	15					S. L. Brooks.
The Dalles.	Wasco.	112	37	36.5	-0.7	49	1†	18	28	24	0.56	-1.50	0.28	8.0	7	14	3	11	w.	C. B. Crosuo.
Toledo.	Lincoln.	75	21	42.6	-1.6	59	23†	18	20	37	5.10	-5.10	1.60	0.0	6	16	9	3	e.	Mrs. Helen T. Duncan.
Umatilla.	Umatilla.	340	23	35.8	-1.2	57	1	11	28	27	0.60	-0.31	0.25	0.3	4	10	2	16	e.	H. P. Osborne.
Vale.	Malheur.	2,342	19	28.2	-3.1	46	11	8	8	33	0.48	-0.48	0.13	0.8	7	18	7	3	ne.	Geo. Howe.
Van.	Harney.	3,506	6	18.1*		36	1†	-12	16	39*	1.06		0.45	10.0	3	8d	11d	5d	nw.	Chas. A. Park.
Wallace Orchard.	Polk.	170	2	39.4		59	9	25	3	39	3.00		0.55	T.	12	3	19	6		L. J. Coverstone.
Wallowa.	Wallowa.	2,935	8	18.4		44	2	-12	28	41a	0.75		0.12	12.3	12	6	4	18	se.	A. J. Swift.
Wamic.	Wasco.	1,500	10	30.6		50	8	5	24	38	0.43		0.12	S.0	4	0	0	28	w.	Claude C. Covey.
Warnsprings.	Crook.	1,500	9	32.8		52	1†	11	16	34	0.35		0.25	1.0	2	9	11	8		J. R. Howell.
Wasco.	Sherman.	1,263	4	35.4		48	1†	18	28	20	0.46		0.25	6.5	4	13	11	4	w.	H. M. Gilliam.
Westfall.	Malheur.	3,000	24.1		56	15	-5	5	51	0.47		0.21	9.0	4	22	2	4	e.	M. A. Baker.	
Weston.	Umatilla.	1,800	19	32.8	-1.8	57	1	0	28	33	2.45	-0.02	0.71	22.5	10	5	5	18	se.	J. D. Dixon.
Williams.	Josephine.	1,368	19	36.4*	-5.9*	36a	20a	15a	15†	29a	1.60	-3.85	0.70	9.0	5	15	7	6	n.	Jacob Rueck.
Yonna.	Klamath.	4,146	4	21.6		41	17	-15	16	48	0.50		0.20	4.2	4	16	7	5	s.	

*, b, *, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry bulb; means are computed from the observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

|| Instruments are read in the morning; the maximum temperature then read is charged to preceding day, on which it almost always occurs.

* Estimated by observer.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for February, 1911. District No. 12, Columbia Valley.*

TABLE 2.—*Daily precipitation for February, 1911. District No. 12—Continued.*

TABLE 2.—*Daily precipitation for February, 1911. District No. 12—Continued.*

Stations.	River basins.	Day of month.																									Total.						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27					
Washington—Cont'd.																																	
Pullman.	Palouse.	.13	.20	.10		.20	.30		.15			.20	.20		.70														.30	2.48			
Quinalt.	Coast.									T.	.07	.30	.10	.14				T.															
Republic.	Kettle.									T.	.10		.10	.30				T.															
Rex Creek.	Columbia.																																
Ritzville.	do.																																
Rock Lake.	Palouse.	.19	T.			T.	T.				.09		.04	.06	.07				.12											.81			
Rosalia.	do.	.45				.06	.03				.03	.02	.05	.20	.08															.16			
Russells Ranch.	Yakima.																																
Seattle.	Puget Sound.	.30		.05	.16	T.	T.	.01	.01	.14	T.	.24	.02	.04				.28	T.		T.	.16	.01							1.80			
Sedro Woolley.	do.	.33		.08	.26	.01	.01	.01			.53	.41	.60				.40	.20	.01	.01											3.63		
Sixfrong.	Columbia.																																
Skagit Power Dam.	Puget Sound.	.51	.06	.26	.13	.22	.16	.04			.35	.08	.20	.19						.31											4.40		
Snohomish.	do.	.40	.40			.14	.08		.05	.02	.08	.09	.30	.11	.75				.36											2.69			
Shoquamie Falls.	Columbia.	.60	.10			.33	.15	T.			.03	.32	.07	.38	.34				.28	.27										3.03			
Snyders Ranch.	do.																																
South Bend.	Coast.	.60	.09			.00	.39	.04	.01		.15		.31	.28	.14	.19			.74	.04										6.30			
Spokane.	Spokane.	.20	.01							T.	.03	T.	.01	.10	.11	T.	.06		.09	.07										1.08			
State University.	Puget Sound.	.16	.03			.13	.07		T.	T.	.12		.09	.20	.08				.23	.11									1.43				
Stokes Ranch.	Columbia.																														1.14		
Summer.	Puget Sound.	.22	.02			.06	.08	.01			.22	.13	.05	.36	.02				.37	.09									1.80				
Sunnyside.	Yakima.																																
Tacoma.	Puget Sound.	.17	.05			.02	.06	T.	.01		.01	.19	.18	.37	.16	T.			.40		T.	T.								1.86			
Tatoosh Island.	Coast.	.07		.01	.42	.26	.25	.53	.01	.03	.34	.12	.79	.20	.04	T.	.59	T.	T.										3.77				
Tieton.	Yakima.																																
Touskeet.	Okanogan.	T.	.49			T.																									.65		
Touchet Ridge.	Columbia.		.20	.17		.60	.30																								1.46		
Trinidad.	do.																														6.90		
Vancouver.	Columbia.	.45	.01			.23	.06		T.	.24		.33	.60	.50	.04				.35											2.80			
Vashon Island.	Puget Sound.	.08	.21	T.		.15	.05	.01	.05	.06	.25	.11	.26	T.				.20	.25										2.08				
Wahluke.	Columbia.																																
Wallace.	Okanogan.																																.50
Walla Walla.	Columbia.	.41	.40			.07																										1.79	
Washougal.	do.	.95	.10			.02	.12	.04	.02		.05	.15	.75	.75	.08			.88	.10											2.14			
Waterville.	Coast.		T.																													1.17	
Wenatchee (near).	do.		T.																													.68	
White Salmon.	do.	.41	.05			.18	.15																								2.36		
Wilbur.	do.																																.34
Wind River.	do.	1.09	.07			.45	.61																								5.63		
Winthrop.	do.																																1.44
Yale.	do.																															6.35	
Zindel.	Snake.	1.30	.01			T.	T.																									2.31	
<i>Oregon.</i>																																	
Albany.	Willamette.	.40	.20			.18	.44	.06			.02	.40	.10	.46	.40	.02		.04	.12											.04	2.88		
Ana River.	SE. Drainage.	.17				.02	T.											.02		T.		T.	.01	T.	T.						1.34		
Ashland.	Rogue.	.35																														1.83	
Astoria.	Columbia.	.24	.08		T.	.51	.08	.22	.02	.27		.17	.60	.61	.08	T.		.60	.05										4.36				
Bagley's Ranch.	Snake.		.04			.06																									0.35		
Baker.																																	
Bay City.	Coast.	.61	.05		.01	.88	.24	.16			.12	.61	.15	.20	.67	.08	.14	.02	.35	.04										5.68			
Bear Creek.	Deschutes.	.25																														0.86	
Bear Valley.	John Day.	.40																														2.02	
Beech Creek.	do.	T.	.50			.07																									1.60		
Bellfountain.	Willamette.	.43	.02	T.	.83	.32	T.				.19	.12	.07	.55	.08	T.			.16	.03									3.58				
Bend.	Deschutes.																																
Big Basin.	John Day.	T.	.30	.40		.25	.45				.15		.02		.35															1.72			
Blackbutte.	Willamette.	.90	.30	.40		.25	.45				.15																			3.85			
Blalock.	Columbia.																														0.15		
Blue Mt. Sawmill.	Umatilla.	.08	.63			.30																									4.66		
Brogan.	Malheur.																														0.30		
Buena Vista.	Snake.		T.			.30																								1.20			
Burns.	SE. Drainage.	.10																													0.50		
Burns Mill.	do.	.60																													1.85		
Butte Falls.	Rogue.	.02	.62			.31	.10				T.	.05	.66	.04	.53	.01			.14										2.74				
California Gulch.	Umatilla.		.40			.21																									2.96		
Canyon City.	John Day.	T.</td																															

TABLE 2.—*Daily precipitation for February, 1911. District No. 12—Continued.*

TABLE 3.—Maximum and minimum temperatures at selected stations for February, 1911. District No. 12, Columbia Valley.

Date.	Montana.				Idaho.																									
	Kalispell.		Missoula.		Afton, Wyo.		Boise.				Bonners Ferry.		Hotspring.		Lewiston.		Mackay §§.		Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	39	18	42	25	40	21	45	33	37	29	53	31	40	37	31	17	43	33	42	28	42	27	36	27	38	32				
2....	37	14	42	20	39	21	46	17	34	18	52	29	39	22	35	19	43	16	38	25	39	20	34	8	36	29				
3....	30	23	31	19	33	-8	33	14	36	19	33	7	39	23	18	-4	36	15	28	11	26	3	30	5	31	14				
4....	30	20	33	16	19	-9	35	18	41	16	34	11	43	26	25	-2	29	14	23	3	37	14	33	10	32	19				
5....	40	22	36	18	36	13	43	27	39	20	42	18	44	32	29	-5	44	29	24	5	41	24	31	25	34	24				
6....	35	19	39	20	33	12	37	26	38	23	44	23	43	31	30	0	39	23	23	15	40	28	31	-6	31	20				
7....	34	18	30	18	19	-12	35	24	37	20	37	21	43	28	23	-1	39	10	23	7	28	2	25	0	31	19				
8....	33	23	40	26	19	-20	37	25	38	21	37	20	45	28	22	-3	32	6	22	-2	28	4	25	4	39	30				
9....	37	17	32	13	17	-19	43	21	43	22	40	32	44	32	15	5	33	7	12	1	6	31	10	26	15	36				
10....	39	24	38	21	38	-17	50	28	41	26	43	29	47	34	30	0	43	10	28	3	36	15	28	5	43	27				
11....	38	23	35	21	39	26	50	30	36	20	54	31	46	33	35	7	45	25	27	8	45	25	40	15	43	28				
12....	36	28	38	21	41	13	39	25	39	22	50	30	44	28	32	8	36	24	30	18	40	20	35	17	37	28				
13....	38	28	38	28	36	4	39	26	36	26	42	25	46	33	31	9	36	23	40	26	33	25	29	16	34	34				
14....	31	21	35	20	27	4	34	24	40	23	32	16	39	33	20	-1	25	12	30	15	28	0	23	-2	32	26				
15....	33	18	36	19	20	-6	35	18	34	20	38	15	41	28	22	0	24	10	24	8	26	11	19	-5	34	26				
16....	34	19	38	14	15	-27	34	21	37	11	35	14	41	23	20	-10	23	7	20	5	27	0	22	-10	34	22				
17....	36	14	29	7	14	-25	36	18	35	18	35	12	38	26	22	-7	26	-1	18	-1	25	-1	20	-15	36	9				
18....	33	22	34	21	24	-9	36	22	34	20	36	21	40	32	28	-7	26	13	28	4	28	12	25	-1	36	26				
19....	35	12	32	14	30	-6	36	27	39	5	40	22	43	27	24	12	30	17	33	11	31	17	26	-1	34	11				
20....	36	13	35	8	16	-4	37	26	40	10	40	16	41	25	19	0	31	9	28	-1	30	11	29	4	34	12				
21....	34	10	29	10	26	-7	38	21	44	8	40	18	45	23	22	-5	32	10	24	-1	31	12	26	1	33	14				
22....	35	7	29	5	23	-15	33	26	38	5	42	18	41	30	19	-9	31	9	20	-2	30	6	36	-8	36	12				
23....	34	9	32	7	25	-10	31	23	39	5	36	21	39	28	20	-2	36	17	22	0	31	20	31	-14	36	9				
24....	18	6	25	3	25	-10	38	16	29	8	37	15	34	30	32	2	31	11	20	-6	33	12	30	-2	25	7				
25....	33	16	34	20	26	4	32	21	40	13	30	18	36	23	26	7	28	20	30	13	32	21	26	8	34	19				
26....	30	8	31	8	23	4	32	20	36	18	32	10	43	19	22	4	25	14	32	-2	31	16	23	7	30	4				
27....	27	-4	26	4	18	-19	31	18	35	-1	40	10	40	23	15	-6	27	-2	24	-4	25	11	30	0	26	5				
28....	26	-3	22	-3	25	-15	34	16	44	0	40	13	42	18	17	-9	33	3	18	-10	31	16	30	-5	32	5				
Mns..	34.0	16.0	33.6	15.1	26.6	-4.1	37.5	22.4	37.8	15.0	40.0	19.5	42.0	27.6	24.7	0.0	32.7	13.7	25.5	6.1	32.3	13.6	28.5	3.0	34.2	18.5				

Washington.

Date.	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Head.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Sixprong.		Spokane.		Tacoma.		Tatoosh Island.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1....	39	30	38	31	37	27	40	32	35	19	42	30	50	30	43	30	37	23	41	30	48	34	40	31	39	29		
2....	41	24	33	15	35	4	39	21	34	7	38	28	49	24	37	10	33	25	44	29	31	16	34	24	37	29		
3....	45	26	33	23	32	19	39	18	25	10	42	31	42	24	39	21	38	28	43	28	45	23	42	40	32			
4....	44	34	40	27	42	23	41	19	26	15	42	33	40	18	47	17	40	29	44	30	49	25	45	33	40			
5....	41	31	42	35	41	16	39	31	34	16	42	34	46	21	43	22	39	27	42	33	48	30	43	34	40			
6....	45	29	42	31	37	27	42	31	39	18	44	35	46	24	45	25	40	27	40	34	43	31	37	41	40			
7....	46	38	42	34	35	9	41	30	32	17	43	38	48	25	44	24	44	30	45	36	45	30	35	44	36			
8....	51	38	43	36	37	21	49	33	33	21	48	40	48	23	45	24	44	31	51	40	49	29	42	38	40			
9....	44	32	45	33	37	19	42	29	35	22	44	40	44	23	43	21	44	31	44	40	47	33	44	42	42			
10....	47	39	46	33	38	14	47	32	42	21	46	36	41	24	45	25	43	30	44	36	45	32	44	44	40			
11....	47	35	46	35	36	26	47	32	42	30	43	36	46	24	44	27	44	30	45	36	48	31	38	44	44			
12....	43	35	46	36	35	16	38	29	37	21	46	36	41	24	45	25	43	30	44	36	47	35	44	44	36			
13....	42	36	43	35	37	32	38	32	41	23	44	36	40	27	47	23	44	33	45	35	38	31	36	43	38			
14....	47	31	40	33	38	18	44	31	40	24	41	35	46	24	43	24	40	29	44	37	41	30	34	40	36			
15....	41	27	42	29	33	29	43	25	39	22	43	35	44	19	41	23	40	28	44	31	41	24	32	41	35			
16....	48	30	45	32	32	14	46	30	28	13	48	37																

MONTHLY WEATHER REVIEW.

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TABLE 3.—*Minimum and maximum temperatures at selected stations for February, 1911. District No. 12—Continued.*

Date.	Walla Walla, Wash.		Oregon.																					
			Ashland.		Baker.		Eugene.		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
1.....	52	32	45	33	.....	.....	51	40	50	48	60	34	45	40	45	33	48	30	40	32	49	34	43	26
2.....	32	20	41	29	.....	.....	44	26	50	32	49	24	46	31	37	30	40	9	40	24	41	28	42	27
3.....	38	23	33	26	.....	.....	46	28	52	37	55	20	47	27	40	27	44	14	45	29	43	27	32	11
4.....	40	18	34	25	.....	.....	37	30	46	34	47	14	46	34	44	28	44	20	47	36	40	23	37	12
5.....	45	33	40	31	.....	.....	45	34	47	39	54	27	45	35	44	36	.....	.....	44	35	45	30	37	19
6.....	42	33	40	29	.....	.....	41	33	48	34	49	30	46	32	45	35	39	22	45	31	46	28	39	13
7.....	44	34	41	26	.....	.....	44	33	47	29	51	25	50	30	47	36	40	20	46	30	47	30	34	11
8.....	47	35	46	27	.....	.....	51	29	50	29	54	21	52	29	52	35	39	12	51	29	49	26	35	8
9.....	40	26	42	30	.....	.....	51	33	50	34	46	16	51	32	48	33	.....	.....	50	32	44	27	36	9
10.....	53	29	48	37	.....	.....	56	38	53	31	49	28	53	42	47	39	43	13	56	39	43	32	38	20
11.....	54	34	42	32	.....	.....	52	34	53	34	47	35	49	35	46	36	44	30	48	30	48	36	46	28
12.....	48	32	46	35	.....	.....	49	35	52	35	52	19	50	30	44	34	47	11	51	30	42	26	39	16
13.....	42	32	45	29	.....	.....	45	33	47	34	51	32	46	37	39	34	40	20	42	33	41	31	41	29
14.....	41	33	37	26	.....	.....	49	30	43	31	49	35	43	32	44	34	37	15	42	31	44	33	37	26
15.....	44	33	40	19	.....	.....	42	30	47	32	49	18	50	31	44	36	34	10	46	27	44	24	39	17
16.....	46	30	45	24	.....	.....	48	30	52	32	52	18	54	32	51	35	38	14	51	29	47	26	37	12
17.....	40	26	41	36	.....	.....	53	34	55	44	44	17	56	42	52	34	44	23	55	33	45	30	34	15
18.....	34	27	44	32	.....	.....	52	32	50	36	39	30	53	33	50	38	45	25	50	32	42	31	44	20
19.....	34	24	47	37	.....	.....	55	32	52	36	45	25	55	31	50	33	40	25	50	31	47	26	41	25
20.....	40	24	58	30	.....	.....	50	26	52	28	45	13	57	29	50	32	36	24	53	25	48	23	39	25
21.....	44	25	50	30	35	11	50	28	52	28	46	16	56	27	47	38	40	23	57	25	45	32	39	17
22.....	34	29	46	29	29	11	57	31	50	20	43	30	49	31	50	37	38	27	48	28	47	35	38	24
23.....	32	25	49	29	32	10	49	26	51	32	41	29	55	30	51	33	38	20	50	26	45	25	38	15
24.....	37	21	40	15	30	7	49	28	50	34	37	18	47	28	40	35	34	15	42	25	43	26	42	9
25.....	32	18	39	28	28	17	47	30	50	32	40	19	48	30	46	34	39	23	43	31	42	32	37	19
26.....	30	16	42	21	27	10	46	28	46	31	36	12	47	29	47	33	32	17	42	29	44	33	36	21
27.....	28	13	37	22	24	3	45	25	53	29	42	12	51	33	42	37	35	7	48	22	42	27	38	17
28.....	28	11	46	31	31	-1	45	23	55	34	35	8	56	31	47	36	35	4	52	24	42	18	36	11
Means.....	40.0	26.2	43.0	28.9	.....	.....	47.9	30.7	50.1	33.9	46.7	22.3	50.1	32.5	46.0	34.5	39.7 ^b	18.2 ^b	47.9	20.7	44.8	28.2	38.4	17.9